6.0 Recommended Projects

This chapter discusses capital project recommendations for Carlsbad's pedestrian network. These infrastructure improvements are intended to enhance pedestrian access and circulation as well as help pedestrians feel more comfortable when walking in Carlsbad. This chapter focuses on engineering and infrastructure. Chapter 7 discusses programs and other non-infrastructure improvements to enhance the walking environment in Carlsbad.

A number of recommendations are made for infrastructure projects that should be implemented on a broad citywide basis. These projects were divided into six major categories of improvements: Infill of Sidewalk Gaps, Americans with Disabilities (ADA) Improvements, Signalized Intersections, Uncontrolled Crosswalk Improvements, Signage Improvements, and Safe Routes to School. As part of the citywide improvement project descriptions, specific recommendations are made for prioritizing these improvements, so that the city can implement them in a logical manner based on the areas of greatest need first. The pedestrian needs analysis presented in Chapter 6 provided the foundation for project prioritization.

Following the citywide project recommendations, fifteen (15) of the highest priority project locations are identified and shown with preliminary project improvement plans. These projects seek to improve specific intersections, corridors, or other locations that were identified through the existing conditions review, extensive public input, and the pedestrian needs analysis.

Project implementation requires that all pedestrian projects and programs be implemented through Carlsbad's Capital Improvement Program process. This includes a public review process and project approval from the City Council. Cost estimates for the projects discussed in this chapter are shown in **Appendix B** of this plan. Total costs for implementing the capital improvements described in this chapter is approximately $23 million.

6.1 Pedestrian Facility Prioritization

Pedestrian facilities were prioritized through a multi-part process which relied upon public input (see Appendix A), the pedestrian needs analysis presented in Chapter 5, and project team field reviews. This extensive data was utilized to develop a listing of twenty-seven (27) corridors and sixty-six (66)

intersections that should receive priority from the City as it pursues pedestrian improvement projects.

Appendix C displays the priority corridors and intersections, along with each facility's ranking. **Figure 6-1** displays the location of priority corridors and intersections across the City of Carlsbad.

6.2 Citywide Pedestrian Improvements

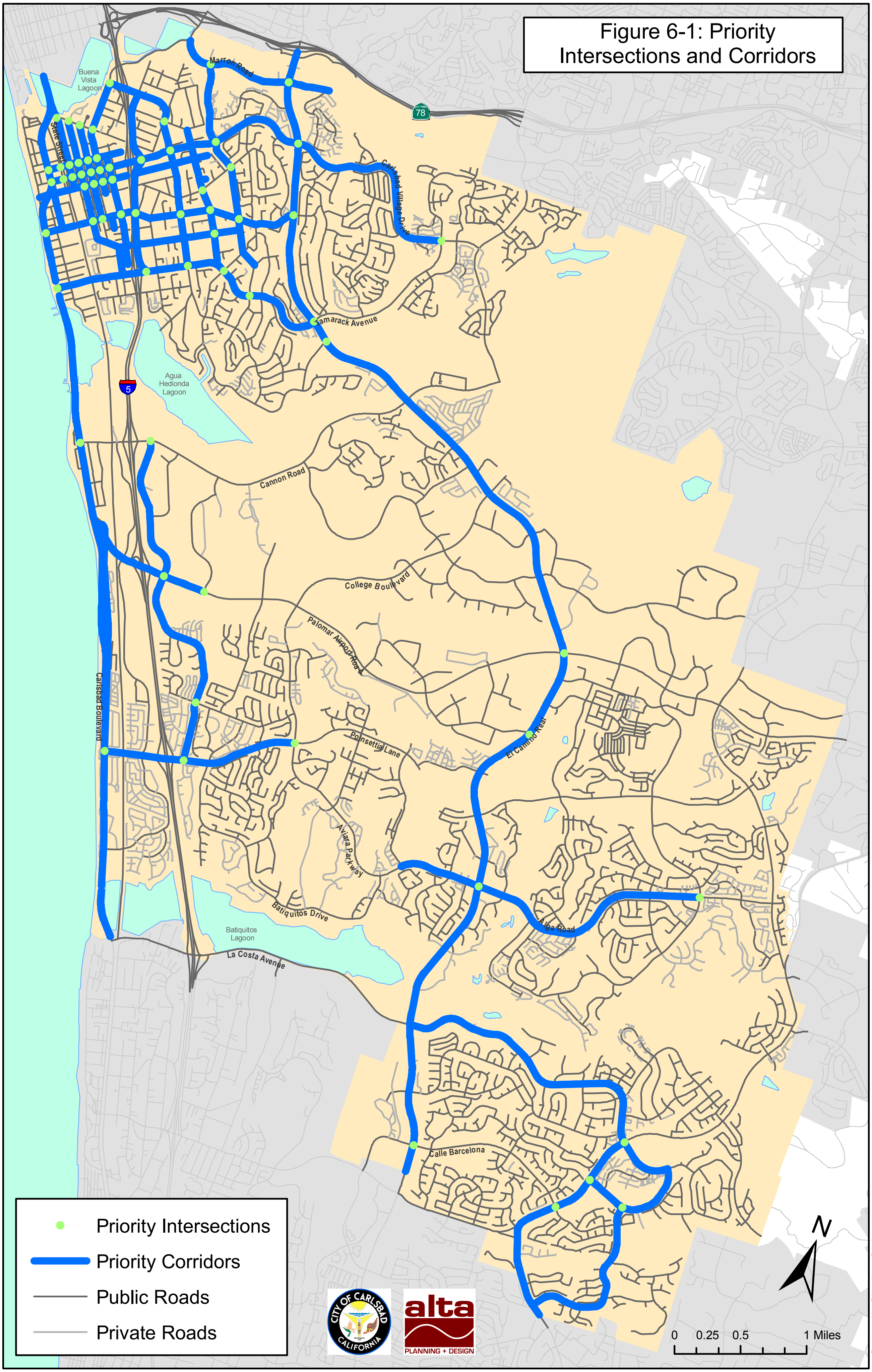
This section summarizes recommended improvement projects applicable on a citywide basis and those identified for application to priority corridors and intersections.

6.2.1 Infill of Sidewalk Gaps

Sidewalk gaps are areas in Carlsbad where there are no sidewalks, or the sidewalk ends abruptly, resulting in a discontinuous pedestrian network. Areas without sidewalks may force pedestrians to walk along the edge of the roadway, or may cause pedestrians to cross at undesignated crossing locations. Providing a continuous pedestrian sidewalk along all of Carlsbad's roadways is recommended. **Figure 6-2** displays locations of roadway segments in Carlsbad with sidewalks missing on both sides of the roadway. Appendix B lists roadway segments in Carlsbad where sidewalks are missing along both sides of the street. The length of the missing sidewalk is shown along with an overall cost associated with completing all sidewalk infill projects across Carlsbad. As shown in Appendix B, there are approximately 275,620 feet–or 52.2 miles–of missing sidewalks in the City of Carlsbad. The majority of the missing sidewalks are in the Northwest quadrant, east of I-5 and north of Tamarack Avenue. Some of the roadways in the Northwest quadrant are classified as Alternative Design Streets, in which case, the City may forego sidewalk infill. In locations near schools, however, it is recommended that the City pursue sidewalk infill for improved safety of children walking to and from school.

RECOMMENDATION: As a first priority, Carlsbad should fill sidewalk gaps located in the Village area. A second priority is to complete missing sidewalk segments along Carlsbad Boulevard.

Figure 6-1: Priority Intersections and Corridors



Source: Alta Planning + Design

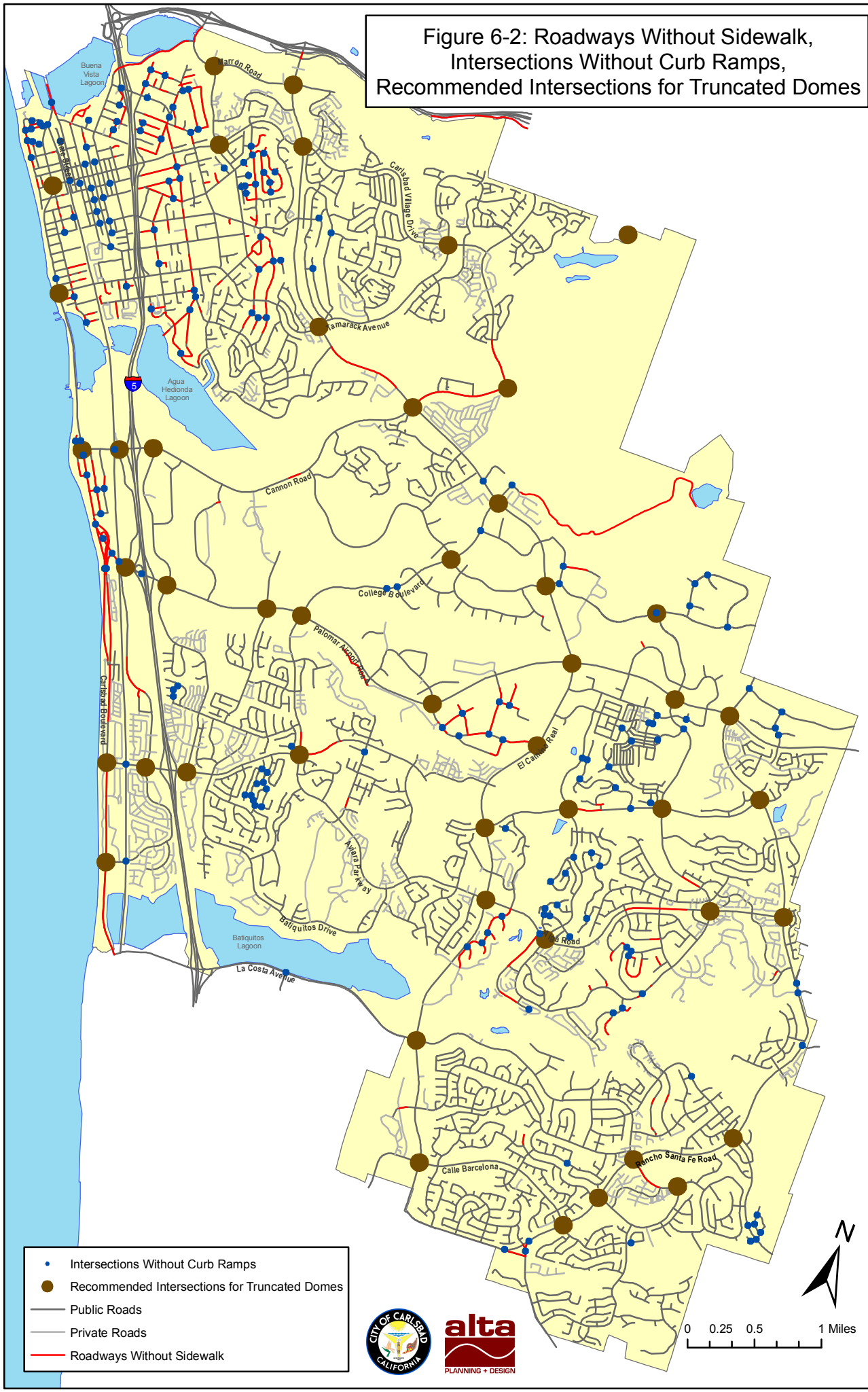


Figure 6-2: Roadways Without Sidewalk, Intersections Without Curb Ramps, Recommended Intersections for Truncated Domes
Buena Vista Lagoon
Harbor Drive
Carlsbad Village Drive
Tamarack Avenue
Agua Hedionda Lagoon
Cannon Road
College Boulevard
Palomar Airport Road
Carlsbad Boulevard
El Camino Real
Aviara Parkway
Batiquitos Drive
Batiquitos Lagoon
La Costa Avenue
Calle Barcelona
Rancho Santa Fe Road
Intersections Without Curb Ramps
Recommended Intersections for Truncated Domes
Public Roads
Private Roads
Roadways Without Sidewalk
CITY OF CARLSBAD CALIFORNIA
alta PLANNING + DESIGN
N
0 0.25 0.5 1 Miles
Source: City of Carlsbad; Alta Planning + Design (2007)

6.2.2 Americans with Disabilities Act (ADA) Improvements

This section presents several types of improvements that will enable the City of Carlsbad to better accommodate disabled populations and comply with Federal and State legislation. These improvements include installation of missing curb ramps and truncated domes at high priority intersections across the city.

Intersections without Curb Ramps

Figure 6-2 displays locations of intersections in Carlsbad that have no curb ramps. There are a total of 733 intersections across the city that do not have curb ramps. This would translate into the installation of a total of 2,932 curb ramps (4 curb ramps at each intersection).

RECOMMENDATIONS: As a first priority, Carlsbad should identify opportunities to install curb ramps at all arterial/arterial intersections and then establish a schedule for constructing them as feasible. Curb ramps at arterial/collector intersections should be evaluated on a case-by-case basis when the City is undertaking construction, maintenance or repair projects that affect the public right-of-way.

Truncated Domes

Truncated domes provide a cue to visually-impaired pedestrians that they are entering a street or intersection. Since 2002, ADA Guidelines (*Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities, September 2002*) have called for truncated domes on curb ramps. Most of Carlsbad's curb ramps lack truncated domes, because they were constructed prior to 2002. On streets that have been constructed since 2002, truncated domes should be installed.

Although it is not required for Carlsbad to install truncated domes at existing curb ramps that were built prior to 2002, the City may wish to install these devices at all high priority intersection locations. Truncated domes are a very visible improvement, and they are relatively inexpensive to install. The preferred option for retrofitting truncated domes requires saw-cutting out a 3x4 space in the ramp in order to embed the truncated dome panel flush with the surface. While more expensive

than simply epoxying the retrofit panel to an existing ramp, the saw-cutting ensures that the domes will not become detached and pose a tripping hazard.

Appendix B displays the forty-six (46) intersection locations recommended for installation of truncated domes on the curb ramps. Figure 7-2 displays the recommended locations for installation of truncated domes on curb ramps.

RECOMMENDATION: Carlsbad should consider retrofitting truncated domes at all forty-six (46) arterial/arterial intersections where they are currently lacking, as shown in Figure 6-2.

6.2.3 Signalized Intersection

This section discusses citywide and priority improvements to signalized intersections. Signage and striping is addressed, along with signal timing adjustments, countdown signals, and audible signals.

Signage and Striping

A signalized controlled intersection provides the greatest level of traffic control for both motor vehicles and pedestrians. However, even with traffic controls, there may be conflicts between vehicles and pedestrians, due to vehicles stopping partially in the crosswalk, failing to yield to pedestrians when turning, or making a right turn on red movement while pedestrians are crossing. Although these conflicts are primarily due to motorist behavior (generally failing to yield), signage and striping improvements can help to increase motorist awareness of their vehicle placement at intersections and their need to yield.

RECOMMENDATION: The City should consider the following improvements at all of the signalized priority intersections:

1) Install Stop Lines five feet in advance of the crosswalks, to help position motorists behind the crosswalk when stopped;
2) Install "Turning Traffic Must Yield to Pedestrians" MUTCD R10-15 signage (*California Manual on Uniform Traffic Control Devices*, 2003), and
3) If pedestrian conflicts appear to be related to right turn on red, consider prohibiting right turn on red at that location.

Signal Timing Adjustment

Signal timing controls the amount of time each phase of a signal is allotted for vehicles and bicycles to pass through or pedestrians to cross the street. Per the MUTCD, standard traffic engineering

design assumes that pedestrians travel at 4.0 feet per second, which together with the width of the street, is used to determine the amount of time to assign to the pedestrian clearance interval. In some cases, this assumed walking speed may result in pedestrian phases that do not allow slower pedestrians, such as the elderly and children, to cross the street before the light changes. By adjusting the signal timing to a slower walking rate, slower pedestrian will have more time to cross the street. Appendix B identifies the ten (10) priority intersections for signal timing adjustments, while **Figure 6-3** displays locations of signalized intersections recommended for signal timing adjustments.

RECOMMENDATION: As a first priority, Carlsbad should consider adjusting signal timing at the Jefferson Street / Carlsbad Village Drive intersection which is near the senior center, and at the eight (8) arterial/arterial intersections adjacent to elementary schools to allow for a pedestrian walking speed of 2.8 feet per second. This slower walking speed is consistent with MUTCD recommendations for walking rates for slower pedestrians. Consideration of signal operation and signal coordination by the Department of Public Works traffic engineers and signal technicians is necessary for this recommendation. As a next priority, consider implementing this signal timing walking speed for all high pedestrian demand locations in the City.

Audible Signals

Audible signals emit sounds to guide visually-impaired pedestrians indicating when it is safe to cross. Audible signals typically vary by intersection approach to assist in orienting visually impaired pedestrians. Sounds are activated by the pedestrian push-button. The MUTCD (Section 4E-06) states that installation of audible signals should be based upon engineering studies that considers the following:

- Potential demand for accessible pedestrian signals;
- A request for accessible pedestrian signals;
- Traffic volumes during times when pedestrians might be present, including periods of low traffic volumes or high turn-on-red volumes; and
- The complexity of traffic signal phasing or intersection geometry.

Appendix B lists the forty-eight (48) priority locations for installation of audible signal heads, while Figure 6-3 displays the recommended locations for installation of audible signals.

RECOMMENDATION: Carlsbad should consider installing audible signals at all forty-eight (48) arterial/arterial installations as a first priority. Locations near senior centers or where there are visually impaired residents should also be high priorities.

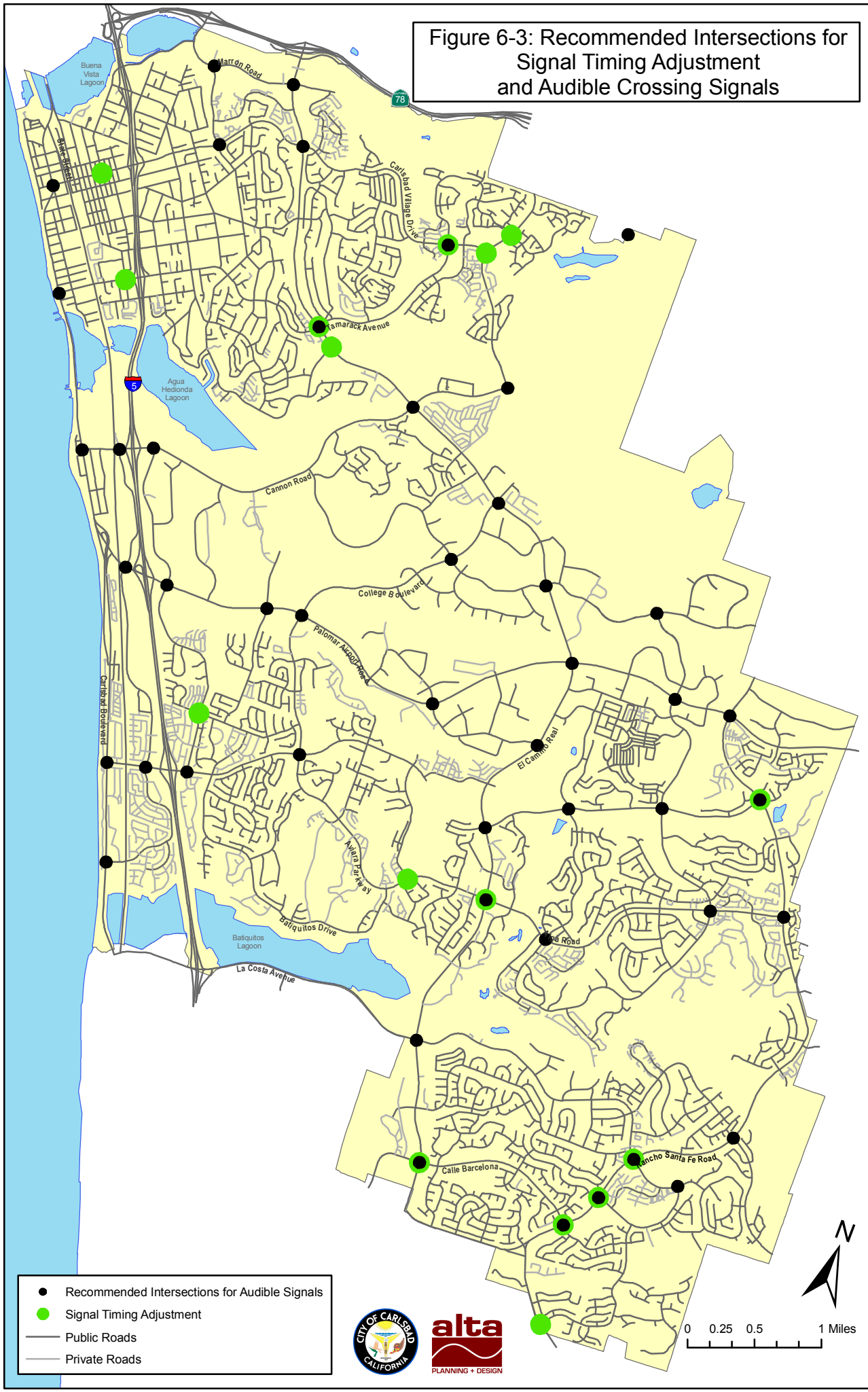


Figure 6-3: Recommended Intersections for Signal Timing Adjustment and Audible Crossing Signals
Buena Vista Lagoon
Marron Road
78
State Street
Carlsbad Village Drive
Tamarack Avenue
5
Agua Hedionda Lagoon
Cannon Road
College Boulevard
Palomar Airport Road
Carlsbad Boulevard
El Camino Real
Aviara Parkway
Batiquitos Drive
Batiquitos Lagoon
La Costa Avenue
Calle Barcelona
Rancho Santa Fe Road
Recommended Intersections for Audible Signals
Signal Timing Adjustment
Public Roads
Private Roads
CITY OF CARLSBAD CALIFORNIA
alta PLANNING + DESIGN
N
0 0.25 0.5 1 Miles
Source: City of Carlsbad; Alta Planning + Design (2007)

6.2.4 Uncontrolled Crosswalk Improvements

Infrastructure improvements at uncontrolled crosswalk locations can help increase the visibility of pedestrians to motorists and improve the pedestrian's walking experience. These improvements are for both unmarked and marked crosswalks at intersections.

High-Visibility Crosswalk Markings

There are a variety of different striping styles for crosswalks. The City of Carlsbad utilizes two different marking styles for pedestrian crosswalks: the standard "transverse" style, consisting of two parallel lines; and the "ladder" style consisting of the two parallel lines with perpendicular ladder bars striped across the width of the crosswalk. Ladder style crosswalks should be used in locations where heightened pedestrian visibility is important, such as in school zones. Appendix B lists locations for upgrading currently marked crosswalks at uncontrolled intersections with high visibility ladder crosswalks, while **Figure 6-4** displays the recommended locations for upgrading currently marked crosswalks at uncontrolled intersections.

RECOMMENDATION: Carlsbad should upgrade currently marked crosswalks at uncontrolled intersections within the priority corridors to high visibility ladder crosswalks.

Parking Restrictions

Implementing parking restrictions in the vicinity of crosswalks at uncontrolled intersections is a low-cost method of ensuring that pedestrian visibility is maintained.

RECOMMENDATION: Parking restrictions (red curb) should be installed one car length adjacent to both sides of all crosswalks recommended for upgrade to high visibility ladder crosswalks (listed in Appendix B and shown in Figure 6-4).

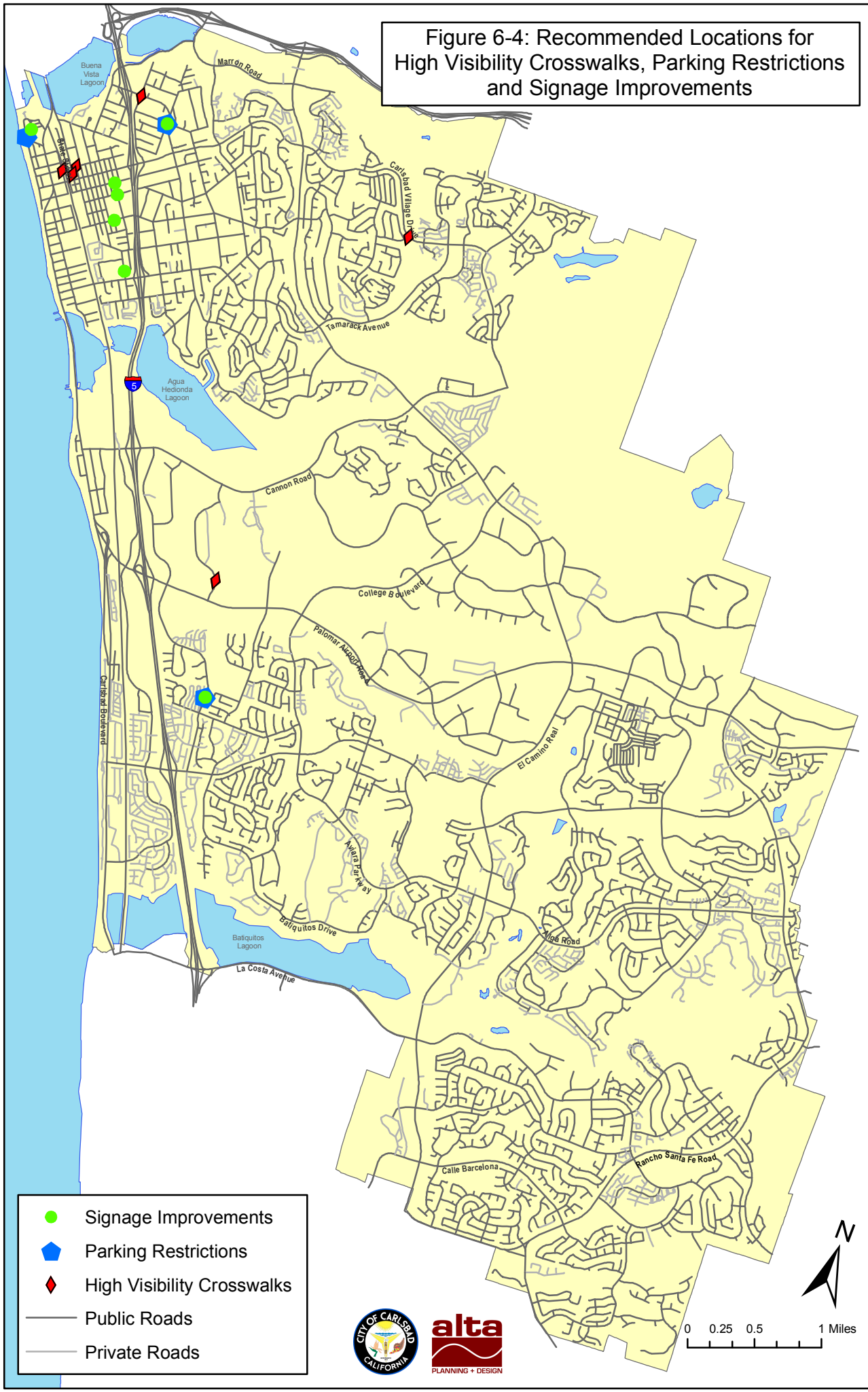


Figure 6-4: Recommended Locations for High Visibility Crosswalks, Parking Restrictions and Signage Improvements
Buena Vista Lagoon
Marron Road
Carlsbad Village Drive
Tamarack Avenue
Agua Hedionda Lagoon
Cannon Road
College Boulevard
Palomar Airport Road
Carlsbad Boulevard
El Camino Real
Aviara Parkway
Batiquitos Drive
Batiquitos Lagoon
La Costa Avenue
Alga Road
Calle Barcelona
Rancho Santa Fe Road
Signage Improvements
Parking Restrictions
High Visibility Crosswalks
Public Roads
Private Roads
CITY OF CARLSBAD CALIFORNIA
alta PLANNING + DESIGN
N
0 0.25 0.5 1 Miles
Source: City of Carlsbad; Alta Planning + Design (2007)

6.2.5 Signage Improvements

The City of Carlsbad's current pedestrian-related signage consists of a mix of current (California MUTCD) and older (California Traffic Manual) signs, in both standard yellow and high-visibility fluorescent yellow green. In accordance with MUTCD sign update schedule, the City of Carlsbad should develop a program to bring all signs up to current MUTCD standards. Of highest priority for pedestrians are the pedestrian advance warning (W11-2) and crossing signs (W11-2 with W16-7P down arrow).

The following considerations should be taken into account when installing signage:

1. Consistent use of standard yellow or fluorescent yellow green along a corridor or area. Avoid mixing signs of different color if possible.
2. To heighten visibility of specific pedestrian or school warning signs along major streets, consider using oversized (expressway size) sign plates.

Appendix C lists locations for upgrading signage at uncontrolled intersection crosswalks within the high priority corridors, while Figure 6-4 displays the locations of recommended signage upgrades.

RECOMMENDATION: Carlsbad should upgrade pedestrian signage along the high priority corridors at all currently marked crosswalks at uncontrolled intersections.

6.2.6 Safe Routes to School

Carlsbad has twenty-one schools located throughout the city. Proximity to schools is one of the primary factors in ranking and prioritizing the projects. Improvements near schools can benefit school-aged children walking to and from school, in addition to improving conditions for all pedestrians around the neighborhood. Several school-based projects are identified in the "top fifteen" projects presented in Section 6.3 of this chapter.

RECOMMENDATION: Carlsbad should pursue implementing a Safe Routes to School program as part of their effort to improve pedestrian safety in school areas. The City should actively pursue SR2S and SRTS grants for any needed pedestrian improvements location near school zones, several of which are included in the top 15 projects of this Plan (See Chapter 7.3 for additional information about Safe Routes to School programs).

6.3 Project Sheets

This section provides specific project improvement sheets for high priority project areas across the City of Carlsbad. This subset of projects was selected from the overall ranking of priority corridors and intersections as presented in Chapter 5, as well as a number of other factors including: 1) potential improvement recommendations that can not be accomplished through one of the citywide infrastructure project categories; 2) providing for a range of different project types, such as intersections, corridors, crosswalks, transit access, and school access; and 4) providing for a geographic balance of project locations throughout Carlsbad.

The listing of projects 1 to 15 does not reflect implementation priority; rather project implementation is likely to be a flexible process that will be based on factors such as funding opportunities, schedules for street improvements, and development or redevelopment activities. This list provides the city with a guide for implementation, to be used in conjunction with the citywide infrastructure project lists described in Section 6.2. City staff should review both the citywide and top fifteen project lists at least annually to update them for projects that have been implemented, for re-adjusting priorities as needed, and for considering any opportunities to incorporate these projects into upcoming development or street improvement activities, as well as any upcoming grant funding cycles that could be targeted.

Table 6.1 displays the top fifteen priority projects recommended for implementation in the City of Carlsbad.

Table 6.1
Top 15 Priority Projects

1 – Plaza Camino Real Transit and Shopping Center
2 – Jefferson Street Corridor
3 – Carlsbad Boulevard (Buena Vista Lagoon Crossing)
4 – Buena Vista Elementary
5 – Carlsbad Village and Transit Center
6 – Chestnut Avenue Corridor
7 – Harding Street Corridor
8 – Carlsbad High and Surrounding Schools
9 – Jefferson Elementary
10 – Calaveras Elementary & Middle Schools
11 – Kelly Elementary
12 – South Carlsbad Boulevard Corridor
13 – Palomar Airport Road Corridor
14 – Aviara Elementary and Middle School
15 – La Costa Canyon High and Surrounding School

Source: Alta Planning + Design; June 2008

1. Plaza Camino Real Transit and Shopping Center

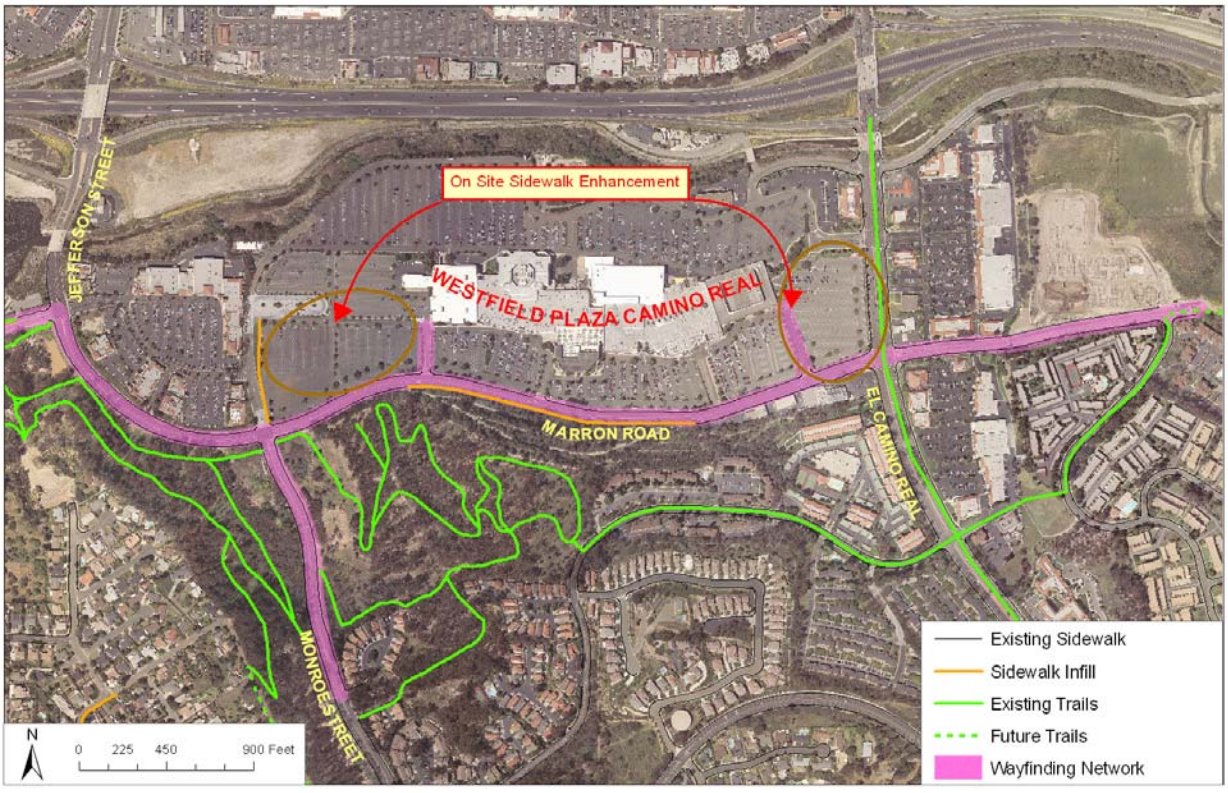
Study Area Description

The Plaza Camino Real Transit and Shopping Center project area extends from Jefferson Street in the west to the future Hidden Canyon Park trail head at the eastern terminus of Marron Road. The transit center at this location has the highest ridership of any transit facility in Carlsbad and generates significant pedestrian activity. The intersection of El Camino Real and Marron Road experiences heavy pedestrian traffic as people travel between shopping centers on either side of El Camino Real as well as between transit stops on the east and west side of El Camino Real. The dense trail system in this study area creates unique opportunities to join residential, shopping and recreational uses within this area. A wayfinding network is envisioned to facilitate citywide east-west connections between the future Hidden Canyon Park Trail and the coast which is approximately two miles to the west. The Westfield Plaza Camino Real suffers from poor on-site pedestrian conditions and is in need of pedestrian facility enhancements.

Issues

- High average daily traffic volumes along El Camino Real
- Most heavily used transit station in Carlsbad; lack of connectivity between transit center and multiple surrounding shopping areas
- Poor on-site pedestrian facilities at the Plaza Camino Real shopping center
- Illegal mid-block crossings between Plaza Camino Real and bus facilities on the east side of El Camino Real
- Major pedestrian barriers, including El Camino Real and SR-78

Proposed Improvements



- Sidewalk infill along Marron Road and Westfield Plaza Camino Real entrance at Monroe Street $136, 706
- Wayfinding signage to connect major origins and destinations including trail access points, the shopping center, the Carlsbad Village, and coastal access points (8,430 feet of wayfinding network@ 1 sign/900 feet = $3,000)

Cost

- $139,706

2. Jefferson Street Corridor

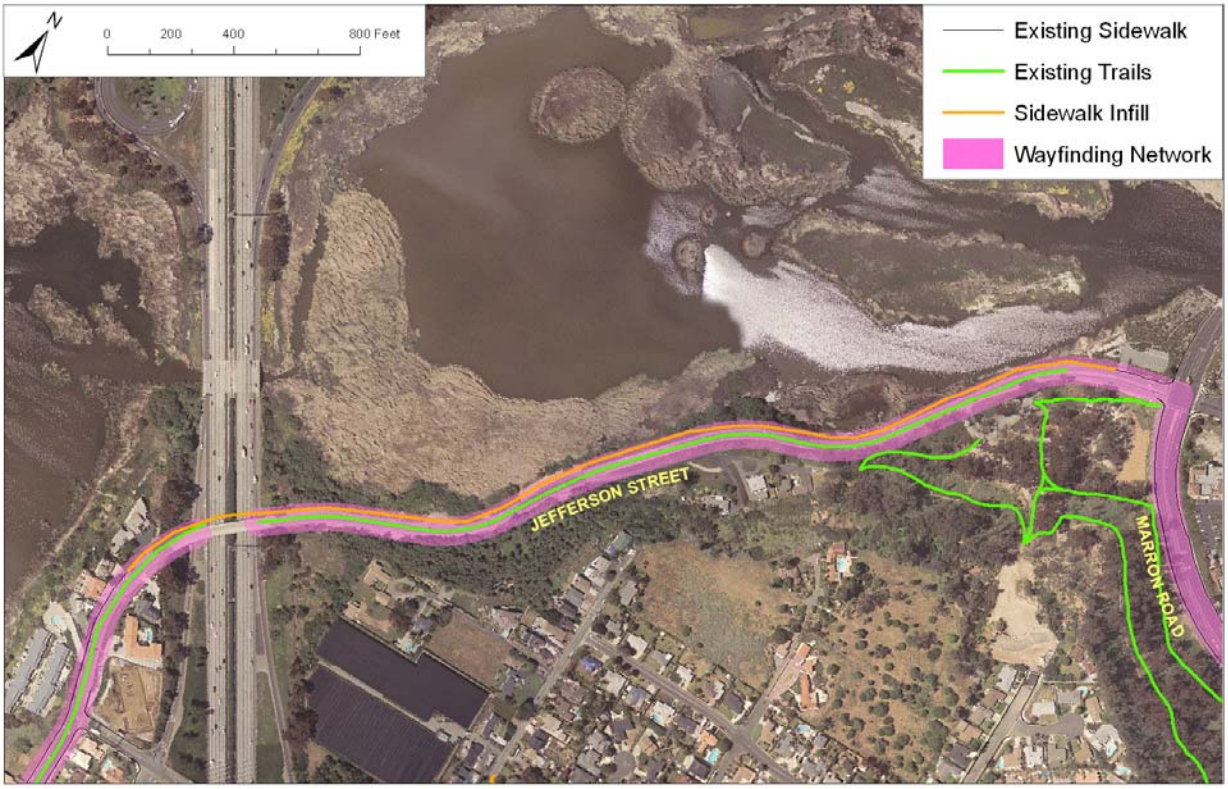
Study Area Description

Jefferson Street along the Buena Vista Lagoon presents a viable opportunity for a strong east-west pedestrian connection between Plaza Camino Real and the Carlsbad Village as it provides a grade-separated, interchange-free crossing of I-5 and generally circumvents the steep slopes along Monroe Street and El Camino Real.

Issues

- Provides opportunity for east-west pedestrian linkage between Plaza Camino Real and downtown Carlsbad
- Near sensitive habitat/ecology
- High recreational pedestrian demands

Proposed Improvements



- Sidewalk infill between Marron Road and Las Flores drive $2,101,450
- Network of signage promoting wayfinding to major origins and destinations including Plaza Camino Real shopping center, Carlsbad Village, coastal access points, and trail access points (6,470 feet of wayfinding network@ 1 sign/900 feet = $2,400)

Cost

- $2,103,850

3. Carlsbad Boulevard (Buena Vista Lagoon Crossing)

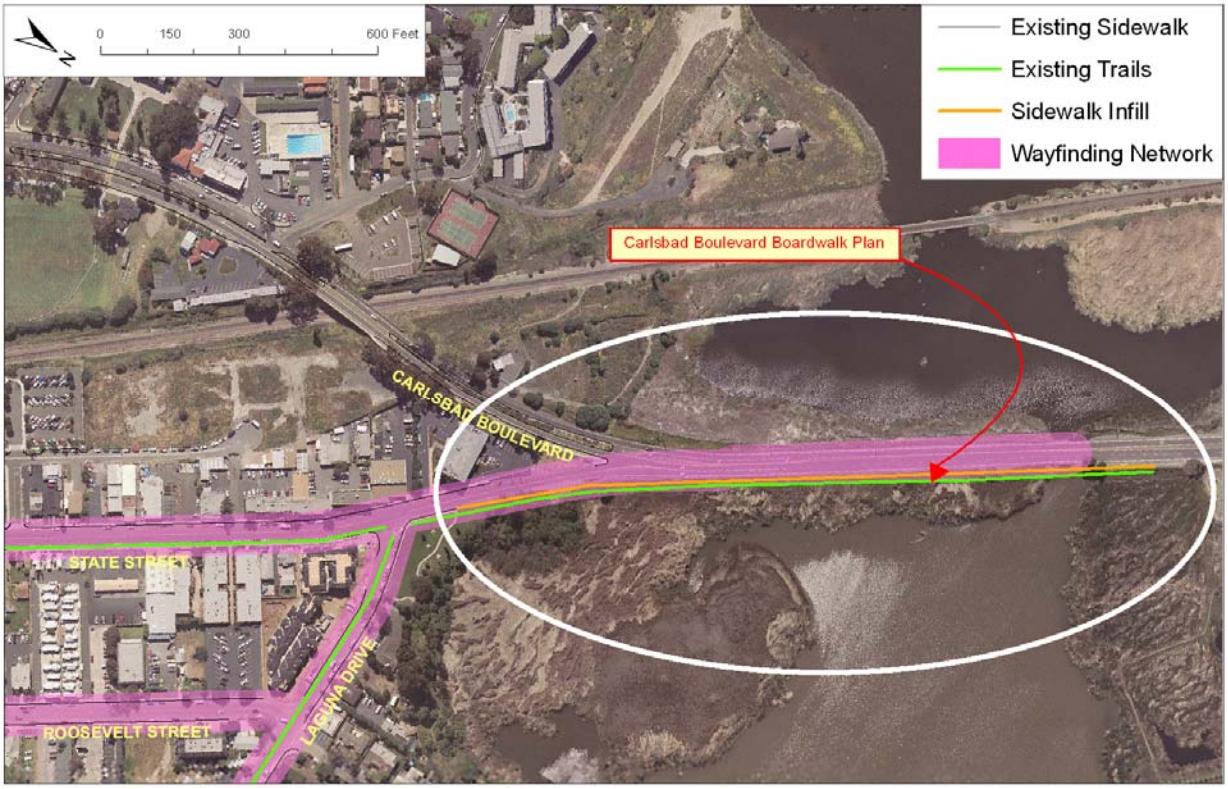
Study Area Description

Carlsbad Boulevard runs north to the City of Oceanside on a narrow strip of land across the Buena Vista Lagoon. A short segment of Carlsbad Boulevard is a bridge over the narrow estuary passage of the lagoon. There are currently no paved sidewalks or adequate buffers from vehicular traffic along the corridor. Plans for a future boardwalk servicing pedestrians across the lagoon to the Buena Vista Lagoon Nature Center are under consideration.

Issues

- Lack of paved pedestrian connection to City of Oceanside
- Pedestrian safety
- Environmental and ecological constraints

Proposed Improvements



- Install sidewalk facilities from Carlsbad's northern boundary and the City of Oceanside, south to Laguna Drive $67,635
- Wayfinding network (4,620 feet of wayfinding network @ 1sign /900 feet = $1,800)

Cost

- $69,435

4. Buena Vista Elementary

Study Area Description

The elementary school is situated along Buena Vista Way – a local residential street. Its parking lot, which also serves as the loading area, is located midblock between Pio Pico Drive and Highland Drive and is only accessible by vehicle from the west. Buena Vista Way becomes a one-way eastbound street immediately to the east of the school parking lot until its intersection with Highland Drive. Buena Vista Way is largely lacking sidewalks, except for small portions near the Pio Pico intersection. A drainage ditch runs along the south side of Buena Vista Way. The school is lacking adequate drop-off/pick-up areas along the street adjacent to the school's parking lot. There is a double yellow line separating vehicular and pedestrian traffic along the street.

Issues

- Poor visibility along Buena Vista Way due to overgrown landscaping
- Lack of sidewalk facilities along Buena Vista Way and on blocks surrounding school
- Inadequate drop-off/pick-up area in front of school
- Non-conforming school sign assembly on Buena Vista Way and Highland Drive
- Vehicular traffic during peak school periods

Proposed Improvements

- Install missing sidewalk facilities along Buena Vista Way, Highland Drive, Pio Pico Way, Arland Road and Forest Avenue $471,583
- Enhanced sidewalks at drop-off/pick-up area in front of school $9,000
- Parking restrictions on the northeast corner of Highland Drive and Buena Vista Way $20
- High visibility restriping of the crosswalk along the east leg of Pio Pico Drive/Las Flores Drive intersection $1,200
- Updated school warning traffic assembly at the northwest and southeast corners of the Highland Drive/Buena Vista Way intersection $600

Cost

- $482,403

5. The Carlsbad Village and Transit Center

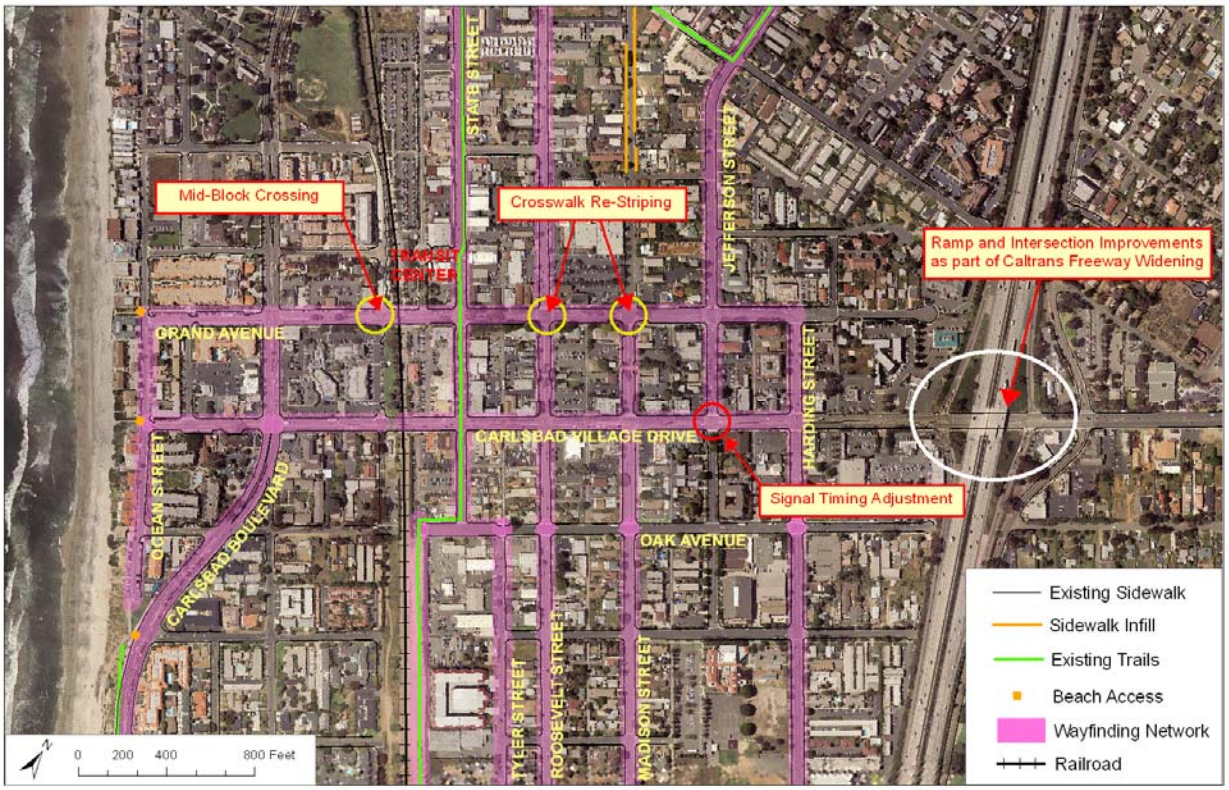
Study Area Description

This study area focuses on Grand Avenue, Carlsbad Village Drive, the Carlsbad Village Transit Center, and the downtown shopping streets that intersect Carlsbad Village Drive and Grand Avenue. The Carlsbad Village has the highest concentration of pedestrian activity in the city. Pedestrian safety is a major concern along Carlsbad Village Drive, where several of its downtown intersections ranked among the highest in the city for pedestrian-vehicular accidents. The streetscape along Carlsbad Village Drive does not provide for pedestrian buffers from its regularly high vehicle traffic volumes. The pedestrian environment is also negatively impacted by Interstate 5 and the San Diego Northern Railway, both of which pose major barriers to pedestrian safety and connectivity.

Issues:

- High levels of pedestrian activity
- Pedestrian-vehicular accidents occur along Carlsbad Village Drive
- High average daily traffic volumes
- Insufficient pedestrian buffers along Carlsbad Village Drive
- Major barriers to pedestrian safety and connectivity caused by railroad line and I-5
- Presence of key public transit station

Proposed Improvements



- Signal timing adjustment at the intersection of Jefferson Street and Carlsbad Village Drive
- Mid-Block crossing at Grand Avenue between Carlsbad Boulevard and State Street $72,353
- Crosswalk restriping (high visibility) $9,600
- Network of signage promoting wayfinding to major origins and destinations including points of coastal access, Carlsbad Village Transit Center, shopping and dining areas, and trail access points. (21,790 feet of wayfinding network@ 1 sign/900 feet = $7,500)
- Sidewalk infill along Madison $39,150

Cost:

- $128,603

6. Chestnut Avenue Corridor

Study Area Description

Chestnut Avenue is an important east-west corridor connecting neighborhoods separated by Interstate 5, where there is an underpass without on/off ramps. To the west of I-5, Chestnut Avenue is divided by the San Diego Northern Railroad. Pedestrian demand for coastal access in this area of Carlsbad is high – many pedestrians illegally cross the tracks to access coastal Carlsbad. Two parks are situated along Chestnut Avenue in the study area. There are sporadic gaps in sidewalk pavement along Chestnut Avenue in the study area.

Issues

- Lack of east/west pedestrian connections across rail right-of-way
- Segments of Chestnut Avenue with no sidewalk
- Demand for coastal access
- Pedestrian facilities near Holiday Park and I-5 underpass in poor condition

Proposed Improvements

- Sidewalk infill and upgrade along Chestnut Avenue and Eureka Place $89,373
- Add bus stop improvements (bench, shelter, and signage) at Chestnut Avenue and Harding Street intersection $40,000
- Network of signage promoting wayfinding to major origins and destinations including points of coastal access, the Carlsbad Village, parks, shopping and dining areas, and trail access points (6,097 feet of wayfinding network@ 1 sign/900 feet = $2,100)
- Proposed Railway Crossing (costing not provided)

Cost

- $131,473

7. Harding Street Corridor

Study Area Description

Harding Street provides a major north-south connection between multiple public facilities near Chestnut Avenue and Harding Street, and points north, near the Carlsbad Village. This corridor experiences high pedestrian demand, and also speeding vehicles. The lack of traffic control at Oak Avenue and Pine Avenue causes driver confusion. The intersection of Harding Street and Carlsbad Village Drive has high rates of pedestrian-vehicular collisions.

Issues:

- Safety issues at uncontrolled crosswalks
- High rates of pedestrian-vehicular collisions
- Vehicles frequently travel faster than posted speed limit
- Poor visibility/placement of pedestrian warning signage
- Non-conforming pedestrian signage

Proposed Improvements

- Install north/south stop sign control along Harding Street at the Harding Street/Pine Avenue and Harding Street/Oak Avenue intersections $1,200
- Construct curb extensions at Harding Street/Pine Avenue and Harding Street/Oak Avenue intersections $372,703
- Remove two overhead pedestrian warning signals along Harding Street between Carlsbad Village Drive and Pine Avenue $240

Cost:

- $374,143

8. Carlsbad High and Surrounding Schools

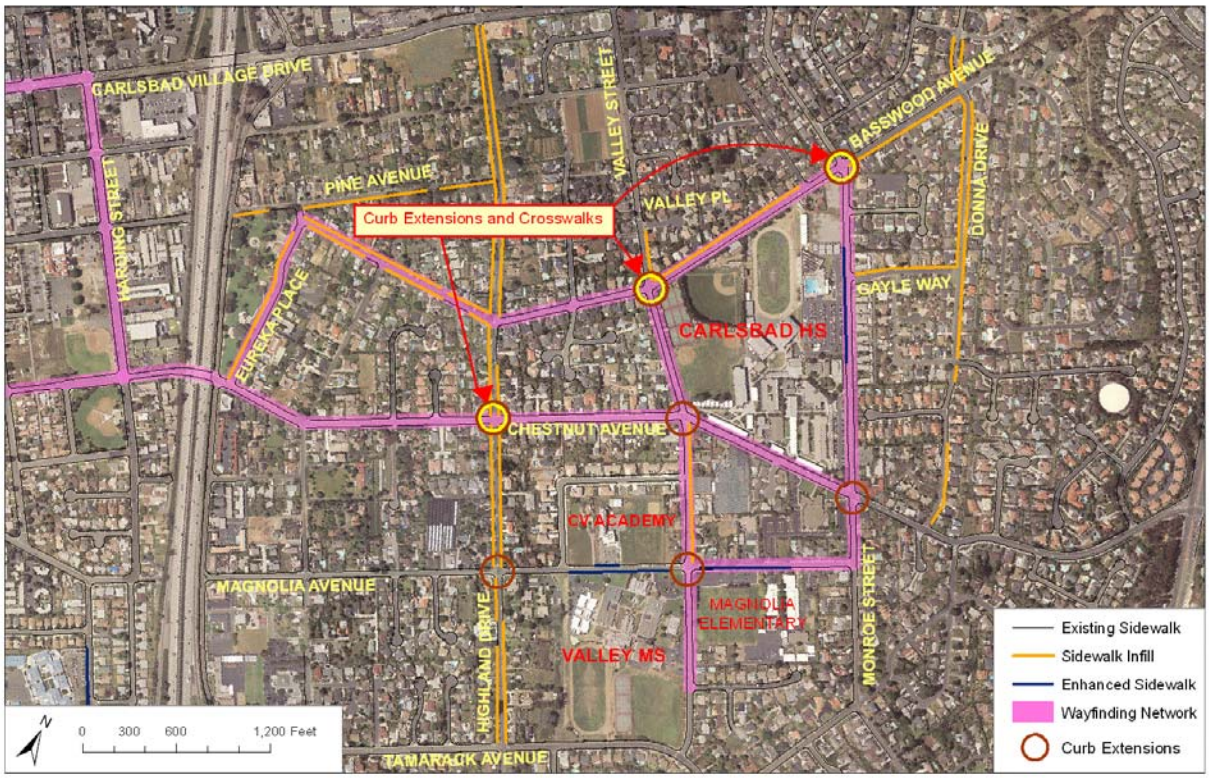
Study Area Description

There are four schools within this study area in a six block area (including Carlsbad High School, Valley Middle School, Carlsbad Village Academy, and Magnolia Elementary situated at a single intersection). Several high pedestrian demand roadways are without sidewalk facilities, including most of Highland Drive. The neighborhood experiences some traffic problems during peak school periods. Chestnut Avenue provides an important connection to the Carlsbad Village across Interstate 5.

Issues

- Lack of sidewalk facilities near schools; many roadways with the Alternative Design Street classification conflict with pedestrian demand generated by schools
- Presence of four schools in study area
- Lack of crosswalks at key pedestrian intersections
- Vehicular traffic during school peak periods

Proposed Improvements



- Missing sidewalk installation $1,451,017
- Enhanced 10' sidewalks near school drop-off/pick-up $195,660
- Curb extension installations (28 curb extensions) $696,083
- Crosswalks (12 high visibility) $14,400
- Wayfinding network (15,371 feet of wayfinding network @ 1 sign/900 feet = $5,400)

Cost

- $2,362,560

9. Jefferson Elementary

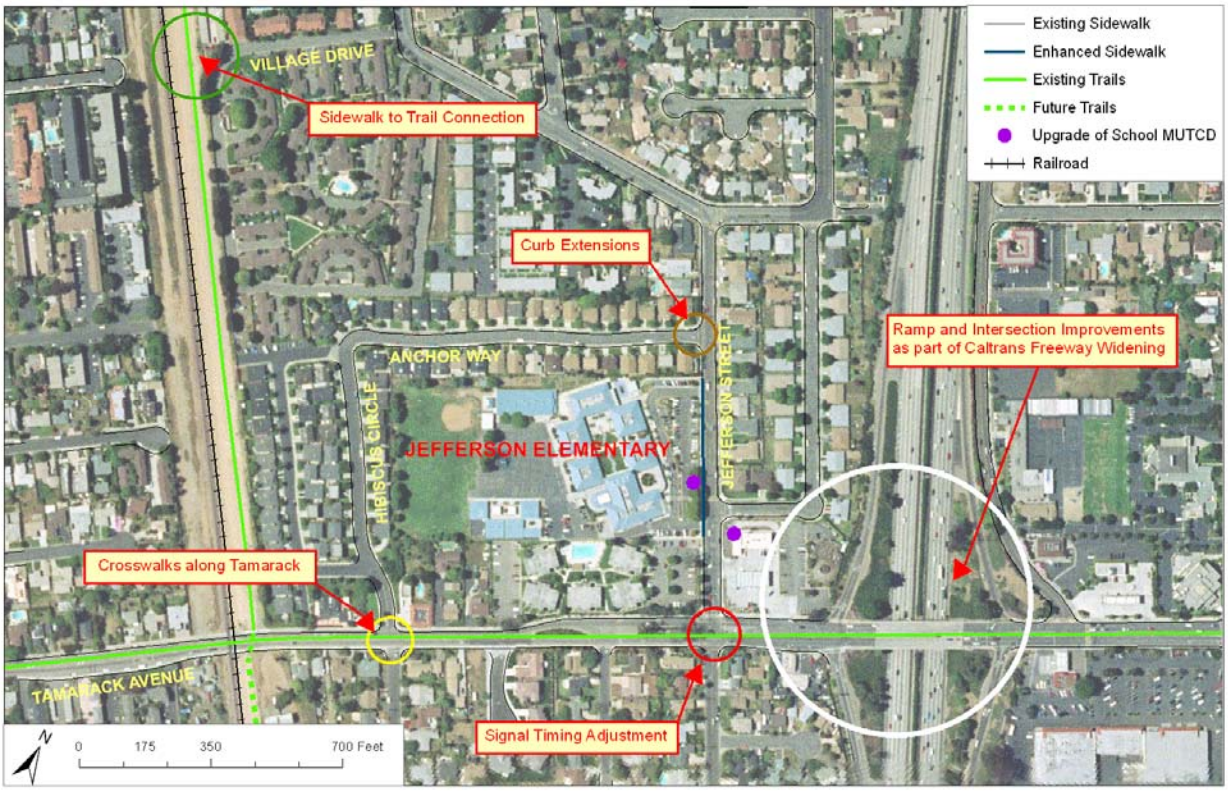
Study Area Description

Jefferson Elementary school is situated within a residential neighborhood bound by Hibiscus Circle on the west, Interstate 5 on the east, and Tamarack Avenue to the south, which is a busy truck route designated roadway. School-related pedestrian activity in the vicinity of these significant barriers is challenging. The residential neighborhoods adjacent to the Coastal Rail Trail lack direct connections to this facility and must travel out of the way to access it.

Issues

- Near Tamarack Avenue freeway interchange
- Pedestrian safety during school arrival and departure periods

Proposed Improvements



- Install a crosswalk along the north leg of the Tamarack Avenue/Hibiscus Circle intersection $1,200
- Enhanced 10' sidewalks at pick-up/drop-off areas in front of school $37,080
- Adjust the signal timing at the Jefferson Street/Tamarack Avenue intersection
- Provide a connection to the Coastal Rail Trail from Village Drive $10,000
- Upgrade school sign assembly at the northwest and southeast corners of the Jefferson Street and Carol Place intersection $600

Cost

- $48,880

10. Calaveras Elementary and Middle Schools

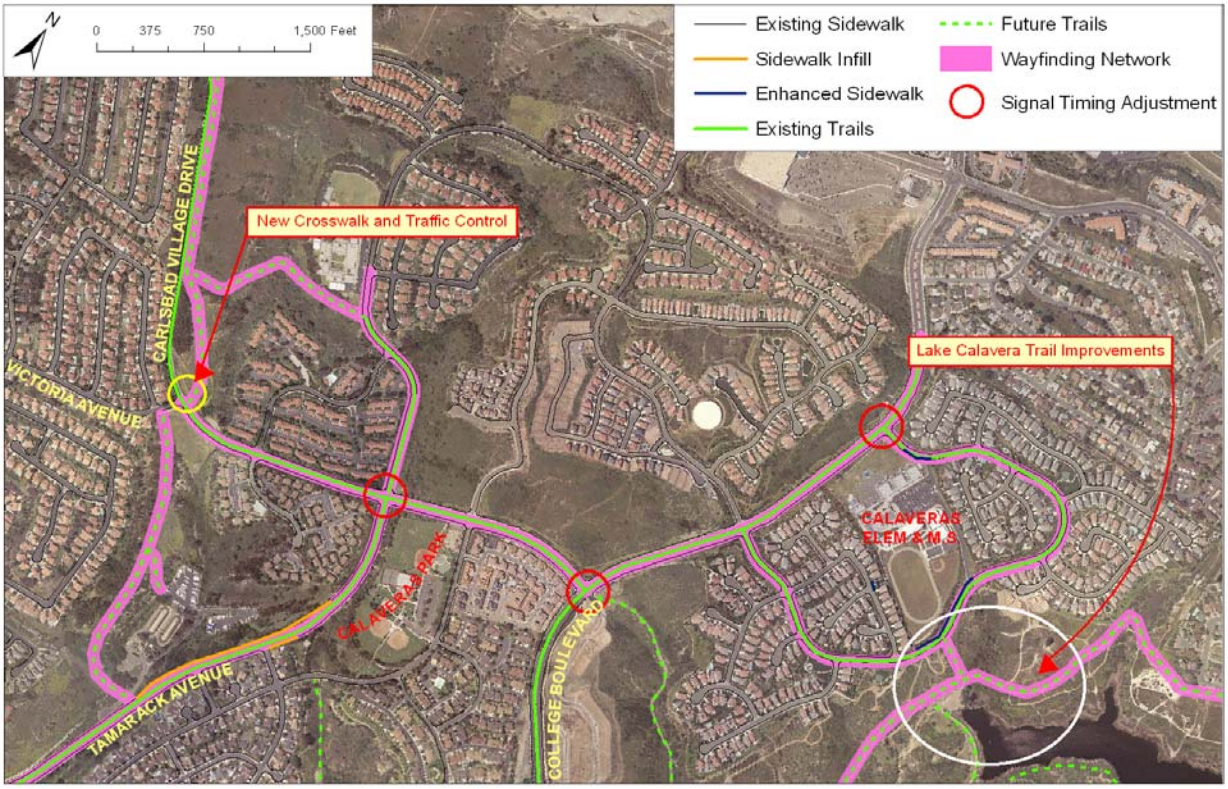
Study Area Description

Calaveras Elementary and Middle schools are situated in a single family residential area near the recreational open space area of Lake Calavera. There are several additional recreational attractions in the vicinity of the school area including Calaveras Park, El Salto Falls, and connections to city trails.

Issues

- Missing sidewalk and path infrastructure along segments of Tamarack Avenue
- Vehicular traffic during school peak periods
- Opportunities for enhanced trail connections

Proposed Improvements



- Signal timing adjustments at three intersections
- Sidewalk infill $68,324
- Enhanced 10' sidewalks at school drop-off/pick-up areas $82,350
- Install Class I path connecting Calaveras Elementary and Middle schools to the southeastern existing/planned trail $75,000
- Wayfinding signage to connect major origins and destinations including the school, trail access points, and parks (34,559 feet of wayfinding network @ 1 sign/900 feet = $11,700)

Cost

- $237,374

11. Kelly Elementary School

Study Area Description

Kelly Elementary School is situated in a single family residential area at the corner of Kelly Drive and Hillside Drive. There are poor pedestrian connections between the residential neighborhoods to the northwest and Kelly Elementary. There are several opportunities to provide enhanced pedestrian connection via the existing and future trail system in the study area.

Issues

- Poor connectivity between school and nearby residential areas
- Near major arterial road
- Vehicular traffic during peak school periods

Proposed Improvements

- Signal timing adjustments at two intersections
- Enhanced 10' sidewalks at school drop-off/pick-up area $81,000
- Install Class I path connecting High Ridge Avenue and Aura Circle $143,400
- Install missing sidewalk facilities along El Camino Real between Tamarack Avenue and Crestview Drive $134,744
- Wayfinding signage to connect major origins and destinations including the school, trail access points, and parks (2,248 feet of wayfinding network @ 1 sign/900 feet = $900)

Cost

- $360,044

12. South Carlsbad Boulevard Corridor

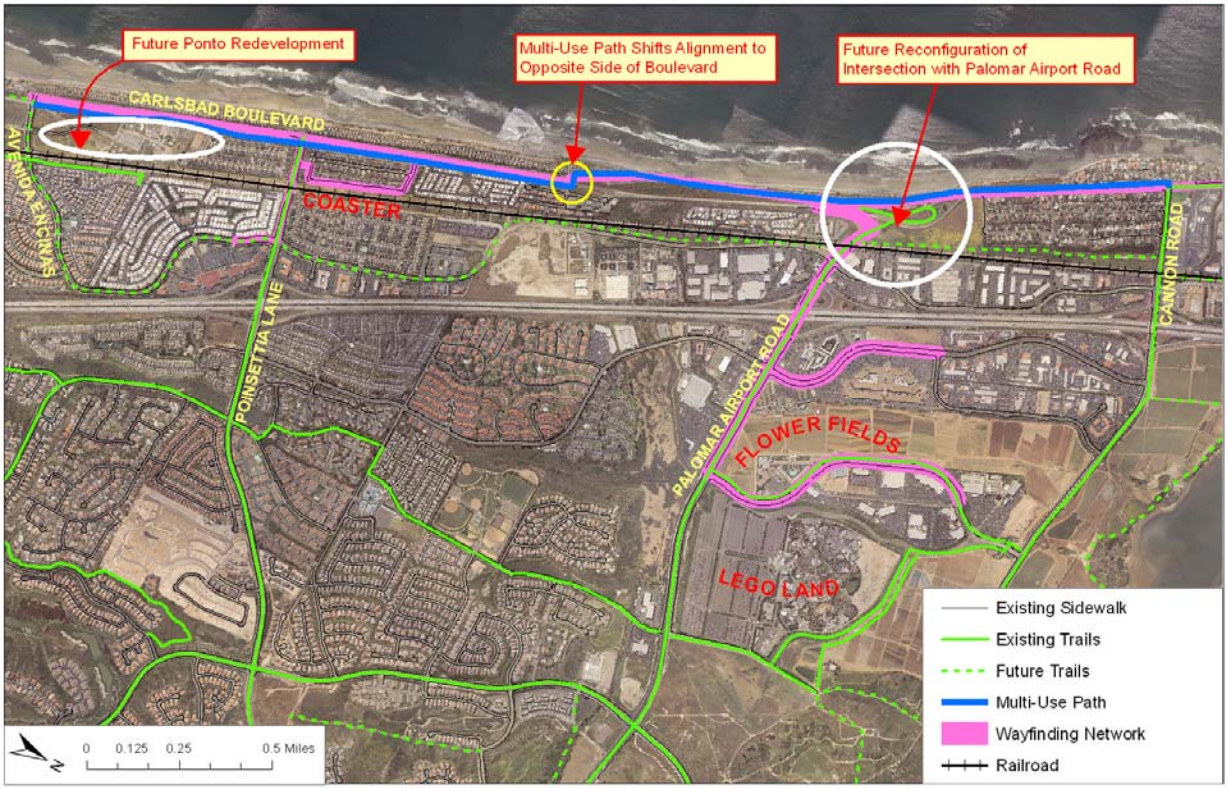
Study Area Description

Carlsbad Boulevard is a key north-south coastal boulevard running the entire length of the city. This study area focuses on the segment south of Cannon Road. Demand for recreational pedestrian and bicycling use is high while pedestrian facilities are mostly unpaved, and pedestrian buffers from the high levels of vehicular traffic are lacking. The interchange with Palomar Airport Road is a major connectivity barrier for pedestrians using the east side of the right-of-way. The City is considering reconfiguring this interchange into a 'T' intersection. The southernmost segment of the corridor in the study area is subject to future redevelopment plans.

Issues

- High demand for recreational pedestrian and bicycle use
- Palomar Airport Road interchange is major barrier to safety and connectivity
- Large segments of roadway with no paved pedestrian facilities
- City does not own portions of land along coast

Proposed Improvements



- Install a multi-use path connecting existing sidewalk facilities on NB Carlsbad Boulevard between Cannon Road and Avenida Encinas $1,642,000
- Network of signage promoting wayfinding to major origins and destinations including points of coastal access, Poinsettia Coaster Station, tourist destinations, shopping and dining areas, and trail access points (26,433 feet of wayfinding network @ 1 sign/900 feet = $5,400)

Cost

- $1,647,400

13. Palomar Airport Road Corridor

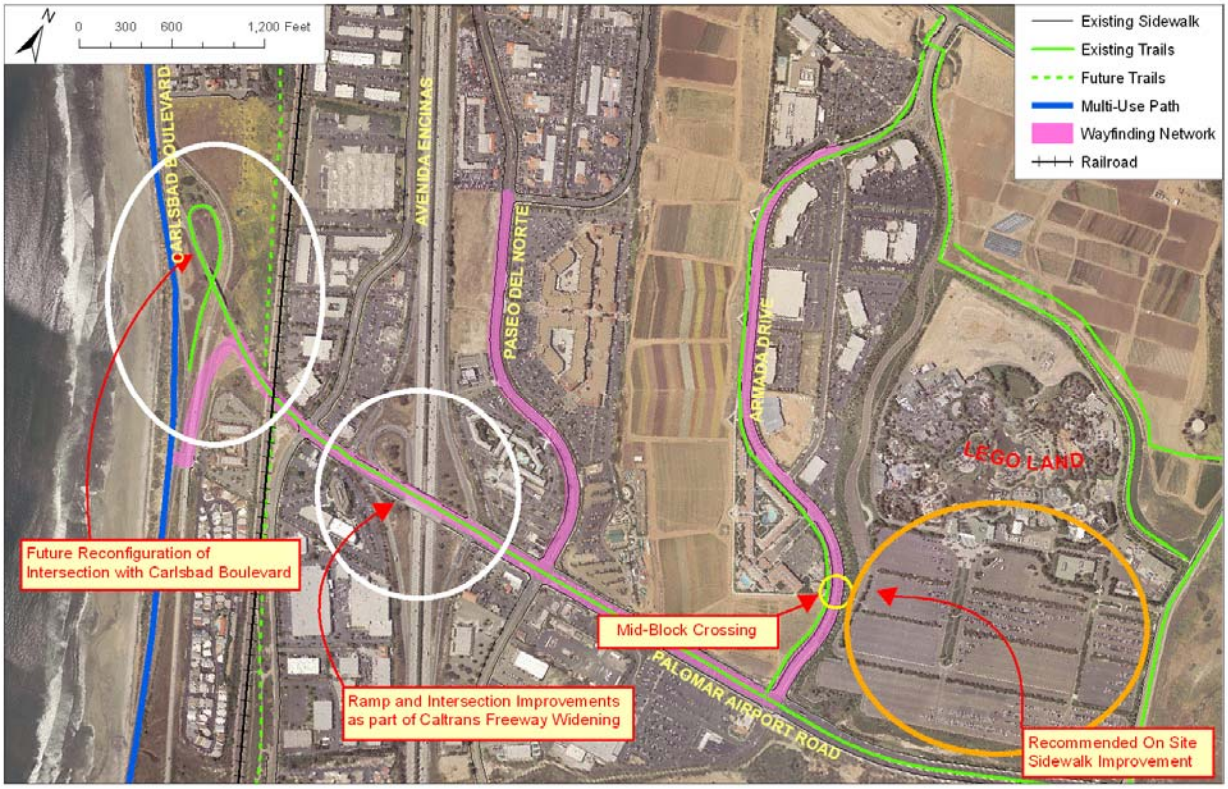
Study Area Description

Palomar Airport Road is a major east-west arterial running between Carlsbad Boulevard and the eastern Carlsbad boundary. This study area is focused on the area west of LegoLand California. The pedestrian environment suffers from barriers caused by Interstate 5 and the rail right-of-way, as well as from very high vehicular traffic volumes. Sidewalk facilities taper off due to the limited right of way along the narrow Palomar Airport Road overpass over the rail right-of-way. In addition to LegoLand, there are several other noteworthy attractions along this corridor: the Flower Fields, the Pacific Coast, a golf course and the outlet shopping center. These tourist-oriented uses are not well connected by pedestrian facilities.

Issues:

- High traffic volumes along Palomar Airport Road
- Highly automobile-oriented land uses and roadway networks, with uninviting pedestrian environment
- Limited pedestrian accessibility to coastal areas and tourist sites within project area
- Major barriers to pedestrian safety and connectivity caused by railroad line, interchange with Carlsbad Boulevard, and topographical and engineering constraints of Palomar Airport bridge over railroad line

Proposed Improvements



- Install a mid-block crosswalk at Armada Drive $72,353
- Network of signage promoting wayfinding to major origins and destinations including points of coastal access, tourist destinations, shopping and dining areas, and trail access points (12,002 feet of wayfinding network @1 sign/900 feet = $4,200)

Cost:

- $76,553

14. Aviara Oaks Elementary and Middle School

Study Area Description

Aviara Oaks Elementary and Middle school is situated at the corner of Ambrosia Lane and Aviara Parkway. The school is in a ravine and surrounded by steep slopes on all sides. The school's on-site loading area experiences severe traffic problems, prompting many parents to drop-off/pick-up along Ambrosia Lane. This phenomenon is also contributing to a high number of U-turns on Ambrosia Lane after parents have picked up their children. There is an activity center to the east of the schools, including a city branch library and retail uses. There are several trails in the study area, though the school is not directly served by any of them. The library lacks direct pedestrian connections to the school and nearby residential developments. The library is isolated from the rest of the shopping center with only a narrow sidewalk through the parking lot providing on-site connections.

Issues

- Poor connectivity to nearby shopping and library land uses
- Circulation issues during drop-off/pick-up periods
- Safety of student pedestrians during peak school periods
- Inadequate sidewalk waiting areas

Proposed Improvements

- Install curb landing at the NE corner of the Ambrosia Lane and Conosa Way intersection $100,000
- Signal timing adjustment at two intersections
- Enhanced 10' sidewalks at school drop-off/pick-up $103,410
- Install Class I path facility connecting the library to Aviara Oaks schools via the northeastern baseball path. $190,362
- Wayfinding signage to connect major origins and destinations including the school, trail access points, public library, and parks. (22,618 feet of wayfinding network @1 sign/900 feet = $7,800)

Cost

- $401,572

15. La Costa Canyon High and Surrounding Schools

Study Area Description

The schools in the La Costa study area are fairly modern and thus have no major infrastructural deficiencies. School drop-off/pick-up periods create traffic and safety issues at Mission Estancia and Olivenhain Pioneer elementary schools. Future development is underway north of La Costa Avenue.

Issues

- Vehicular traffic near schools during peak school periods
- Missing sidewalks
- Speeding vehicular traffic

Proposed Improvements

- Enhanced 10' sidewalks at school pick-up/drop-off $95,760
- Signal timing adjustment at four intersections
- Wayfinding signage to connect major origins and destinations including schools, trail access points, and parks (27,995 feet of wayfinding network @1 sign/900 feet = $9,600)

Cost

- $105,360